

ABSTRACT

A heat transfer system includes an evaporator having a heated wall, a liquid barrier wall containing working fluid, a primary wick positioned between the heated wall and the inner side of the liquid barrier wall, a vapor removal channel located at an interface between the primary wick and the heated wall, and a liquid flow channel located between the liquid barrier wall and the primary wick. Methods of transferring heat include applying heat energy to a vapor barrier wall, flowing liquid through a liquid flow channel, pumping the liquid from the liquid flow channel through a primary wick, and evaporating at least some of the liquid at a vapor removal channel.